



ecology and environment, inc.

Global Environmental Specialists

720 Third Avenue, Suite 1700, Seattle, WA 98104

Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: November 28, 2012

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

TO: Jeff Fetters, START-3 Project Manager, Seattle, Washington

SUBJ: **Organic Data Quality Summary Check,
Fourth Avenue and Gamble Parking Lot Site, Anchorage, Alaska**

REF: TDD: 12-01-0004 PAN: 002233.0757.01SI

The data summary check of 13 Gore Sorber™ air filter samples collected from the Fourth Avenue and Gamble Parking Lot site in Anchorage, Alaska, has been completed. Volatile Organic Compound (VOC) analysis (EPA modified Method 8260) was performed by Gore Labs, Inc., Elkton, Maryland. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM). The samples were numbered (field ID-sample name):

PP01SG-00690005	PP02SG-00690004	PP03SG-00690003	PP04SG-00690011
PP05SG-00690010	PP06SG-00690009	PP07SG-00690002	PP08SG-00690007
PP09SG-00690008	TB01SG-00690000	TB02SG-00690001	BLK01SG-00689995
TB03SG-00689994			

Data Qualifications:

Raw data and summary results were not provided for these samples and analyses. The following information was provided in the Case Narrative by the analytical laboratory:

For this project, the analytical method, results, and observations reported do [√] do not [] fall within the scope of W. L. Gore's ISO 17025 accreditation. The GORE® Modules are analyzed at Gore's fixed laboratory using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260 (SPG-WI-0318), and include the following:

BFB Tuning Frequency: Analyze a tune at the start of each analytical run and every 12 hours of analysis.

Initial Calibration: A minimum of a five point calibration curve is analyzed prior to the analysis of samples.

Linearity of Target Compounds: If the RSD of any target analyte is less than or equal to 15% then average response factor can be used for quantitation. If the RSD exceeds 15% for a target compound a regression equation can be used for quantitation. A minimum of 5 calibration levels are required for linear regression. A minimum of 6 calibration levels are required for quadratic regression. When using a linear or quadratic fit, do not force intercept through 0.

Initial Calibration Verification: After calibration curve is analyzed and before samples are analyzed the initial calibration curve must be verified using a second source standard and must meet 8260C criteria.

Continuing Calibration Verification: Every 12 hours a continuing calibration standard is analyzed near the mid-point of the calibration and must meet 8260C criteria. Every analytical batch must have an ending continuing calibration verification standard.

Laboratory Control Sample: Every 12 hours a second-source reference standard is analyzed near the mid-point of the calibration curve and must meet 8260C criteria.

Method Blank: Analyzed prior to the analysis of field samples and every 12 hours of analysis.



Internal Standard: Introduced to all QC samples (standards, method blanks, ICV, CCV's) and samples including trip and field blanks.

Surrogate: Introduced to all QC samples (standards, method blanks, ICV, CCV's) and samples including trip and field blanks. Acceptance limits must meet 8260C criteria or laboratory determined limits if limits are not found in analytical method.

Method deviations: None.

1. Sample Holding Times: Acceptable.

The samples were collected on July 25 or August 16, 2012, and were analyzed by August 2 or 24, 2012, therefore meeting QC holding time criteria of less than 14 days between collection and analysis; soil criteria were used in the absence of Gore SorberTM limits.

2. Overall Assessment of Data for Use

There were no detections in any trip blanks. A detection limit is not provided for summed combinations of analytes. In summed results, the reported values are considered estimated if any of the individual columns were reported as below the detection limit; these summed results are qualified as estimated quantities with a low bias (JL). Sample results listed as "nd" and "bdl" by the laboratory were qualified as not detected (U) at the limit of detection by the data reviewer even though results listed as "bdl" are positive results less than the limit of detection.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 ECOLOGY AND ENVIRONMENT INC, SEATTLE, WA
 GORE STANDARD TARGET VOCs/SVOCs (8260M)
 ESTIMATED SOIL GAS CONCENTRATION
 1007 WEST THIRD AVE, ANCHORAGE, AK
 PRODUCTION ORDER #21732946

DATE ANALYZED	FIELD ID	SAMPLE NAME	BTEX, ug/m^3	BENZ, ug/m^3	TOL, ug/m^3	EtBENZ, ug/m^3	mpXYL, ug/m^3	oXYL, ug/m^3
		LOD=		31.43	2.61	1.10	1.02	1.43
08/24/12	BLK01SG	689995	bdl	nd	2.61U	bdl	1.02U	1.43U
08/02/12	PP07SG	690002	6.56	JL	bdl	5.22	bdl	1.35
08/02/12	PP03SG	690003	6.24	JL	bdl	4.92	bdl	1.32
08/02/12	PP02SG	690004	7.53	JL	bdl	5.86	bdl	1.67
08/02/12	PP01SG	690005	8.62	JL	bdl	4.49	bdl	2.42
08/02/12	PP08SG	690007	6.07	JL	nd	3.99	bdl	2.08
08/02/12	PP09SG	690008	8.95	JL	bdl	7.01	bdl	1.94
08/02/12	PP06SG	690009	6.61	JL	bdl	5.32	bdl	1.29
08/02/12	PP05SG	690010	5.04	JL	nd	3.83	bdl	1.22
08/02/12	PP04SG	690011	6.51	JL	bdl	4.97	bdl	1.54
08/24/12	TB03SG	689994	nd	nd	2.61U	nd	1.02U	nd
08/02/12	TB01SG	690000	nd	nd	nd	nd	nd	nd
08/02/12	TB02SG	690001	nd	nd	nd	nd	nd	nd
08/02/12		method blank	nd	nd	nd	nd	nd	nd
08/02/12		method blank	nd	nd	nd	nd	nd	nd
08/24/12		method blank	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

NW 12812

GORE(TM) SURVEYS ANALYTICAL RESULTS
 ECOLOGY AND ENVIRONMENT INC, SEATTLE, WA
 GORE STANDARD TARGET VOCs/SVOCs (8260M)
 ESTIMATED SOIL GAS CONCENTRATION
 1007 WEST THIRD AVE, ANCHORAGE, AK
 PRODUCTION ORDER #21732946

FIELD ID	SAMPLE NAME	C11, C13, &C15, ug/m^3	UNDEC, ug/m^3	TRIDEC, ug/m^3	PENTADEC, ug/m^3	TMBs, ug/m^3	124TMB, ug/m^3
	LOD=		0.87 U	0.87 U	0.87 U		1.16
BLK01SG	689995	nd	nd	nd	nd	nd	1.16U nd
PP07SG	690002	bdl	bdl	nd	nd	bdl	bdl
PP03SG	690003	nd	nd	nd	nd	bdl	bdl
PP02SG	690004	bdl	bdl	nd	nd	bdl	bdl
PP01SG	690005	bdl	bdl	bdl	nd	1.60	1.60
PP08SG	690007	nd	nd	nd	nd	bdl	1.16U bdl
PP09SG	690008	nd	nd	nd	nd	bdl	bdl
PP06SG	690009	nd	nd	nd	nd	bdl	bdl
PP05SG	690010	bdl	bdl	bdl	nd	bdl	bdl
PP04SG	690011	bdl	nd	bdl	nd	bdl	bdl
TB03SG	689994	nd	nd	nd	nd	nd	nd
TB01SG	690000	nd	nd	nd	nd	nd	nd
TB02SG	690001	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 ECOLOGY AND ENVIRONMENT INC, SEATTLE, WA
 GORE STANDARD TARGET VOCs/SVOCs (8260M)
 ESTIMATED SOIL GAS CONCENTRATION
 1007 WEST THIRD AVE, ANCHORAGE, AK
 PRODUCTION ORDER #21732946

FIELD ID	SAMPLE NAME	135TMB, ug/m ³	ct12DCE, ug/m ³	t12DCE, ug/m ³	c12DCE, ug/m ³	NAPH&2-MN, ug/m ³	NAPH, ug/m ³
	LOD=	1.56		467.17	141.41		0.87
BLK01SG	689995	nd	nd	nd	nd	bdl	nd
PP07SG	690002	nd	nd	nd	nd	nd	nd
PP03SG	690003	nd	nd	nd	nd	nd	nd
PP02SG	690004	nd	nd	nd	nd	bdl	bdl
PP01SG	690005	bdl	nd	nd	nd	bdl	bdl
PP08SG	690007	nd	nd	nd	nd	nd	nd
PP09SG	690008	nd	nd	nd	nd	nd	nd
PP06SG	690009	nd	nd	nd	nd	nd	nd
PP05SG	690010	nd	nd	nd	nd	nd	nd
PP04SG	690011	nd	nd	nd	nd	nd	nd
TB03SG	689994	nd	nd	nd	nd	nd	nd
TB01SG	690000	nd	nd	nd	nd	nd	nd
TB02SG	690001	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 ECOLOGY AND ENVIRONMENT INC, SEATTLE, WA
 GORE STANDARD TARGET VOCs/SVOCs (8260M)
 ESTIMATED SOIL GAS CONCENTRATION
 1007 WEST THIRD AVE, ANCHORAGE, AK
 PRODUCTION ORDER #21732946

FIELD ID	SAMPLE NAME	2MeNAPH, ug/m^3	MTBE, ug/m^3	11DCA, ug/m^3	111TCA, ug/m^3	12DCA, ug/m^3	TCE, ug/m^3	OCT, ug/m^3
	LOD=	0.87	200.50	160.50	40.23	32.65	12.33	2.67
BLK01SG	689995	bdl	nd	nd	nd	nd	nd	nd
PP07SG	690002	nd	nd	nd	nd	nd	nd	nd
PP03SG	690003	nd	nd	nd	nd	nd	nd	nd
PP02SG	690004	nd	nd	nd	nd	nd	nd	nd
PP01SG	690005	nd	nd	nd	nd	nd	nd	nd
PP08SG	690007	nd	nd	nd	nd	nd	nd	nd
PP09SG	690008	nd	nd	nd	nd	nd	nd	nd
PP06SG	690009	nd	nd	nd	nd	nd	nd	bdl
PP05SG	690010	nd	nd	nd	nd	nd	nd	nd
PP04SG	690011	nd	nd	nd	nd	nd	nd	nd
TB03SG	689994	nd	nd	nd	nd	nd	nd	nd
TB01SG	690000	nd	nd	nd	nd	nd	nd	nd
TB02SG	690001	nd	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 ECOLOGY AND ENVIRONMENT INC, SEATTLE, WA
 GORE STANDARD TARGET VOCs/SVOCs (8260M)
 ESTIMATED SOIL GAS CONCENTRATION
 1007 WEST THIRD AVE, ANCHORAGE, AK
 PRODUCTION ORDER #21732946

FIELD ID	SAMPLE NAME	PCE, ug/m^3	14DCB, ug/m^3	CHCl3, ug/m^3	CCl4, ug/m^3	112TCA, ug/m^3	CIBENZ, ug/m^3	1112TetCA, ug/m^3
	LOD=	1.96	0.94 U	77.10	35.40 U	1.75 U	1.20 U	0.85 U
BLK01SG	689995	2.67	nd	77.10 bdl	nd	nd	nd	nd
PP07SG	690002	14.01	nd	bdl	nd	nd	nd	nd
PP03SG	690003	1.960 bdl	nd	nd	nd	nd	nd	nd
PP02SG	690004	3.90	nd	nd	nd	nd	nd	nd
PP01SG	690005	12.16	nd	nd	nd	nd	nd	nd
PP08SG	690007	4.31	nd	nd	nd	nd	nd	nd
PP09SG	690008	1.960 bdl	nd	nd	nd	nd	nd	nd
PP06SG	690009	2.01	nd	91.35	nd	nd	nd	nd
PP05SG	690010	5.87	nd	77.10 nd	nd	bdl	nd	nd
PP04SG	690011	7.84	nd	nd	nd	nd	nd	nd
TB03SG	689994	1.960 bdl	nd	nd	nd	nd	nd	nd
TB01SG	690000	nd	nd	nd	nd	nd	nd	nd
TB02SG	690001	nd	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd	nd
	method blank	nd	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 ECOLOGY AND ENVIRONMENT INC, SEATTLE, WA
 GORE STANDARD TARGET VOCs/SVOCs (8260M)
 ESTIMATED SOIL GAS CONCENTRATION
 1007 WEST THIRD AVE, ANCHORAGE, AK
 PRODUCTION ORDER #21732946

FIELD ID	SAMPLE NAME	1122TetCA, ug/m^3	13DCB, ug/m^3	12DCB, ug/m^3
	LOD=	0.85 U	0.93 U	0.87 U
BLK01SG	689995	nd	nd	nd
PP07SG	690002	nd	nd	nd
PP03SG	690003	nd	nd	nd
PP02SG	690004	nd	nd	nd
PP01SG	690005	nd	nd	nd
PP08SG	690007	nd	nd	nd
PP09SG	690008	nd	nd	nd
PP06SG	690009	nd	nd	nd
PP05SG	690010	nd	nd	nd
PP04SG	690011	nd	nd	nd
TB03SG	689994	nd	nd	nd
TB01SG	690000	nd	nd	nd
TB02SG	690001	nd	nd	nd
	method blank	nd	nd	nd
	method blank	nd	nd	nd
	method blank	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

Handwritten signature/initials

MW

GORE® Surveys - Final Report

KEY TO DATA TABLE

UNITS

µg	micrograms, relative mass value
MDL	method detection limit
LOD	limit of detection
LOQ	limit of quantification
bdl	below detection limit; compound was observed at level below the MDL
nd	non-detect, compound was not detected at any level
J	compound was detected below the LOQ, but above the MDL
E	compound was detected at a level exceeding the upper calibration
Q	one or more QC parameters related to this compound failed

ANALYTES

BTEX	combined masses of benzene, toluene, ethylbenzene and total xylenes (Gasoline Range Aromatics)
BENZ	benzene
TOL	toluene
EthBENZ	ethylbenzene
mpXYL	m-, p-xylene
oXYL	o-xylene
C11,C13&C15	combined masses of undecane, tridecane, and pentadecane (C11+C13+C15) (Diesel Range Alkanes)
UNDEC	undecane
TRIDEC	tridecane
PENTADEC	pentadecane
TMBs	combined masses of 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene
135TMB	1,3,5-trimethylbenzene
124TMB	1,2,4-trimethylbenzene
ct12DCE	cis- & trans-1,2-dichloroethene
12DCE	trans-1,2-dichloroethene
c12DCE	cis-1,2-dichloroethene
NAPH&2-MN	combined masses of naphthalene and 2-methyl naphthalene
NAPH	naphthalene
2MeNAPH	2-methyl naphthalene
MTBE	methyl t-butyl ether
11DCA	1,1-dichloroethane
CHCl3	chloroform
111TCA	1,1,1-trichloroethane
12DCA	1,2-dichloroethane
CCl4	carbon tetrachloride
TCE	trichloroethene
OCT	octane
PCE	tetrachloroethene
ChBENZ	chlorobenzene
14DCB	1,4-dichlorobenzene
112TCA	1,1,2-trichloroethane
1112TetCA	1,1,1,2-tetrachloroethane
1122TetCA	1,1,2,2-tetrachloroethane
13DCB	1,3-dichlorobenzene
12DCB	1,2-dichlorobenzene

BLANKS

method blank	QA/QC module, documents analytical conditions during analysis
--------------	---